

In the Claims:

Please cancel claims 10-22, and 33-43. Please add new claims 44-63. The claims are as follows:

1-43 (Canceled)

44. (New) A method for dissipating heat from an electronic package having one or more components, comprising:

mounting each of said one or more components to a top surface of a substrate and electrically connecting each of said one or more components to said substrate, said substrate having a first coefficient of thermal expansion;

attaching a bottom surface of a peripheral lid support to a periphery of a top surface of said substrate, said peripheral lid support having sidewalls defining a cavity open at a top surface and said bottom surface of said peripheral lid support;

attaching said top surface of said peripheral lid support to only a bottom surface of a peripheral sidewall of a lid, said peripheral sidewall integrally formed only with and around a periphery of a top wall of said lid, said lid including a separate bottom wall positioned inside and sealed to inside surfaces of said peripheral sidewall, said top wall, peripheral sidewall and bottom wall of said lid defining a vapor chamber, said vapor chamber containing a heat transfer fluid, said top wall and said peripheral sidewall of said lid having a second coefficient of thermal expansion and said bottom wall of said lid having a third coefficient of thermal expansion, said first coefficient of expansion about equal to said second coefficient of thermal expansion; and

placing a solid thermal transfer medium in direct physical contact with a back surface of each of said one or more components and in direct physical contact with an outer surface of said bottom wall of said lid.

45. (New) The method of claim 44, wherein each said one or more components has a fourth coefficient of thermal expansion and said third coefficient of thermal expansion is about equal to said fourth coefficient of thermal expansion and said second coefficient of thermal expansion is different from said third coefficient of thermal expansion.

46. (New) The method of claim 44, wherein each said one or more components has a fourth coefficient of thermal expansion and said third coefficient of thermal expansion is between about 50% to about 700% of said fourth coefficient of thermal expansion and said second coefficient of thermal expansion is different from said third coefficient of thermal expansion.

47. (New) The method of claim 44, further including:

mounting a heat sink having a fifth coefficient of thermal expansion to an outer surface of said top wall of said lid, said fifth coefficient of expansion about equal to said second coefficient of thermal expansion.

48. (New) The method of claim 44, further including:

mounting a heat sink having a fifth coefficient of thermal expansion to an outer surface of said top wall of said lid, said fifth coefficient of expansion between about 25% and about 700% of said second coefficient of thermal expansion.

49. (New) The method of claim 44, wherein said bottom wall of said lid has protruding first regions for maintaining equivalent contact with said thermal transfer medium on thin components of said one or more components as is maintained by second non-protruding regions on thick components of said one or more components, said first regions thicker than said second regions.

50. (New) The method of claim 44, wherein said bottom wall of said lid has protruding first regions for maintaining equivalent contact with said thermal transfer medium on thin components of said one or more components as is maintained by second non-protruding regions on thick components of said one or more components, said first regions and said second regions having a same thickness.

51. (New) The method of claim 44, said lid further including supports completely within said vapor chamber, each support having a vertical member extending between said top wall of said lid and said bottom wall of said lid, each vertical member perpendicular to said top and bottom walls and each and every vertical member aligned over a different and only one component of said one or more components or aligned over a single row of components of said one or more components or aligned over only one empty location on said substrate that may be occupied by a corresponding component of said one or more components.

52. (New) The method of claim 51, wherein said supports are integrally formed with said top wall of said lid.

53. (New) The method of claim 52, wherein said supports divide said vapor chamber into sub-chambers and said supports include through holes interconnecting said sub-chambers.

54. (New) The method of claim 51, wherein said supports are integrally formed with said bottom wall of said lid.

55. (New) The method of claim 54, wherein said supports divide said vapor chamber into sub-chambers and said supports include through holes interconnecting said sub-chambers.

56. The method of claim 44, said lid further including one or more bellows, each bellows of said one or more bellows separate from said top and bottom wall and extending between an inner surface of said top wall and inner surface of said bottom wall within said vapor chamber, each bellows of said one or more bellows aligned over a different and only one component of said one or more components or over only one empty location on said substrate that may be occupied by a corresponding component of said one or more components.

57. (New) The method of claim 44, wherein said package is selected from the group consisting of ball grid array modules, pin grid array modules, land grid array modules and hyper ball grid array (HyperBGA) modules.

58. The method of claim 44, wherein said package is a hyper ball grid array (HyperBGA) module.

59. (New) The method of claim 44, wherein said lid is formed from material selected from the group consisting of aluminum, copper, Invar, gold, silver, nickel, aluminum-silicon carbide, plastics, ceramics and composites.

60. (New) The method of claim 44, wherein said substrate includes material selected from the group consisting of ceramics, fiberglass, polytetrafluoroethylene, and polymers.

61. (New) The method of claim 44, wherein said bottom wall of said lid is formed from a different material than said top wall and said peripheral sidewall of said lid.

62. The method of claim 44, wherein said bottom wall of said lid is formed from a same material as said top wall and said peripheral sidewall of said lid.

63. (New) The method of claim 44, wherein said peripheral lid support is fabricated from a same material as said top wall and said peripheral sidewall of said lid.